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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,613	02/25/2002	Jordi Parramon	AB-174U	4464
23845	7590	12/08/2004	EXAMINER	
ADVANCED BIONICS CORPORATION 25129 RYE CANYON ROAD VALENCIA, CA 91355			DEBERADINIS, ROBERT L	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 12/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/082,613

Applicant(s)

PARRAMON ET AL.

Examiner

Robert DeBeradinis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-25 is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5/7/02.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

Claim 13 recites the limitation "the stimulation channels" in the claim. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 6, 7 are rejected under 35 U.S.C. 102(b) as being anticipated by MITCHELL 6,355,990.

Regarding claims 1, 2, 7.

MITCHELL discloses a power supply (figure 6) comprising:

- a power source providing a source voltage ( $V_s$ );
- means for processing the source voltage (PWM) to generate an output voltage at a Vout node (CA, L2 junction);
- a multiplicity of energy storage devices (C1-CK) adapted to individually controllably receive energy from the Vout node.

Regarding claim 3.

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MITCELL discloses wherein the multiplicity of energy storage devices includes a multiplicity of switches individually in series with the multiplicity of small capacitors, wherein each of the multiplicity of switches and a respective small capacitor are electrically connected between the Vout node and ground, and wherein the multiplicity of switches are controlled to independently regulate the degree to which each of the multiplicity of small capacitors is charged (figure 6, column 1, lines 63-65).

Regarding claim 6.

MITCHELL discloses wherein the means for processing comprises a switching regulator ( PWM) comprising:

An inductor (L1); and

A first switch (SA);

Wherein the inductor (L1) is electrically connected between the source voltage (VS) and the Vout node and ground.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 8, 9, 10, 11, 12, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over MITCHELL.

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Regarding claims 4, 8.

MITCHELL discloses wherein the multiplicity of energy storage devices includes a multiplicity of switches individually in series with the multiplicity of small capacitors, wherein each of the multiplicity of switches and a respective small capacitor are electrically connected between the Vh node and ground, and wherein the multiplicity of switches are controlled to independently regulate the degree to which each of the multiplicity of small capacitors is charged (figure 6, column 1, lines 63-65).

MITCHELL does not disclose a diode electrically connected between the Vout node and the Vh node.

Applicant's prior art figure 3 discloses a diode electrically connected between the Vout node and the Vh node.

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the power distribution system taught by MITCHELL to place a diode electrically connected between the Vout node and the Vh node. The motivation would be to remove diodes D1-Dk to simplify the distribution system and still prevent capacitors from discharging back through L2 when switches are closed.

Regarding claims 9, 10, 11

MITCHELL discloses figure 5, switches S1-SK and means for controlling the switch functions. It would be obvious to control the switches to charge all the capacitors

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at the same time by connecting the capacitors in parallel and to serially disconnect the switches one at a time to provide a controlled step voltage function whereby each capacitor would receive an additional voltage as a function of the additional time during which it receives the additional charge.

Regarding claims 12, 14.

MITCHELL discloses:

A control circuit (obvious for controlling the switches);

An inductor (L1) with input electrically connected to the DC source (Vs) and an output electrically connected to a node Vout;

A first switch (SA) electrically connected between the Vout and ground, wherein the first switch is controlled by the control circuit;

A multiplicity of small capacitors in parallel; and

A multiplicity of switches connected in parallel, each electrically connected individually between the node Vh and one of the small capacitors, wherein the switches are controlled by the control circuit (figure 6, column 1, lines 55-68).

MITCHELL is silent as to the dc source being a battery and wherein a diode including a cathode side and an anode side, wherein the cathode side is electrically connected to the node Vout, and the anode side is electrically connected to a node Vh.

It is well known to one having ordinary skill in the art that a battery is a DC source and Applicant's prior art teaches wherein the cathode side is electrically

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connected to the node Vout, and the anode side is electrically connected to a node Vh.

It would have been obvious to one having ordinary skill in the art at the time of this invention to use a battery for a DC source and to modify the power distribution system to include a diode wherein the cathode side is electrically connected to the node Vout, and the anode side is electrically connected to a node Vh. The motivation would be to provide a portable power distribution system and to simplified the circuit by removing diodes D1-Dk.

Claims 13, 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over MITCHELL 6,355,990 in view of MEADOWS 6,516,227.

Regarding claims 13, 15-18.

MITCHELL discloses the power supply of claim 12 including a multiplicity of Vc nodes wherein the small capacitors are electrically connected between the Vc nodes and ground.

MITCHELL does not disclose a multiplicity of switches each electrically connected between a Vc node and a multiplicity of stimulation channels, wherein the switches are adapted to selectably connect the Vc nodes to the stimulation channels.

MEADOWS discloses a spinal cord stimulation system including multi stimulus channels (abstract).

It would have been obvious to one having ordinary skill in the art at the time of this invention to connect the power distribution system disclosed by MITCHELL to a multiplicity of stimulation channels. The motivation would be to supply the stimulus to a multiplicity of stimulation channels.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over MITCHELL 6,355,990 in view of MEADOWS 6,516,227 in further view of HARRISON 6,754,537.

Regarding claim 19.

MITCHELL in view of MEADOWS disclose the method of claim 17.

MITCHELL in view of MEADOWS does not disclose Cochlear Stimulation.

HARRISON discloses hybrid cochlear implant hearing aid system (abstract) consisting of an electrode array.

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the method of claim 17 to provide the same stimulating apparatus to provide the stimulation for the cochlear stimulator. The motivation would be to supply the stimulus to a multiplicity of stimulation channels.

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over MITCHELL 6,355,990 in view of MEADOWS 6,516,227 in further view of MEADOWS US 2002/0161403.

Regarding claim 20.

MITCHELL in view of MEADOWS disclose the method of claim 17.

MITCHELL in view of MEADOWS does not disclose selecting a group of the stimulation channels of a Deep Brain Stimulation system for stimulation.

MEADOWS US 2002/0161403 discloses a Deep Brain Stimulation System.

It would have been obvious to one having ordinary skill in the art at the time of this invention to modify the method of claim 17 to provide the same stimulating apparatus to provide the stimulation for deep brain stimulation. The motivation would be to supply the stimulus to a multiplicity of stimulation channels to stimulate the brain.

***Allowable Subject Matter***

Claims 21-25 allowed.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or suggest the method of disconnectably connecting a multiplicity of switched capacitors in parallel between the node Vs and ground and disconnectably connecting the switched capacitors in series between ground and a node Vout.

Any inquiry concerning this communication should be directed to Robert L. DeBeradinis whose number is (571) 272-2049. The Examiner can normally be reached Monday-Friday from 8:30 am to 5:00 pm.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Brian Sircus, can be reached on (571) 272-2058. The Fax phone number for this Group is (703) 872-9306.

RLD

DECEMBER 1, 2004

A handwritten signature in black ink, appearing to read "Robert L. Deberadinis". The signature is stylized with a large, looped "R" and a cursive "L".

**ROBERT L. DEBERADINIS**  
**PRIMARY EXAMINER**